

REMARKS

I. Introduction

In response to the pending Office Action, Applicants have added new claims 52-57 in order to further clarify the subject matter of the present invention. Support for claims 52-57 may be found, for example, in original claims 6-9, 11 and 12. No new matter has been added.

With regard to the reference entitled "High-quality 4H-AlN of 4H-SiC(11-20) substrate by polytype matching", the date of the reference is August 30, 2003. Applicants are submitting a copy of the document which was published in "Extended Abstracts for the 64th Autumn Meeting of the Japan Society of Applied Physics", and which was filed in the IDS of August 18, 2004 and considered by the Examiner in October 2005. Please note the date is on the table of contents and also on the copyright page (6th line from the bottom).

II. Rejection Of Claims 2, 3, 5 and 51 Under 35 U.S.C. § 102

Claims 2, 3, 5 and 51 were rejected under 35 U.S.C. § 102(a) as being anticipated by Onojima et al. (*Appl. Phys. Lett.* Vol. 83 (2003), p. 5208-10).

With regard to the present invention, claim 51 recites a semiconductor device comprising a III-V Nitride semiconductor epitaxial film having 4H-polytype structure formed in contact with a substrate having 4H-type structure, wherein the III-V Nitride semiconductor epitaxial film is a 4H-AlN film.

It is alleged that Onojima explains "that the purpose of the heterostructure is for devices". However, the reference is referring to devices on a nonpolar plane as recited in the 1st and 2nd paragraphs on page 5208 ("the polytype of the AlN epilayer was a 2H structure"; "we have reported growth of AlN on 6H-SiC (1120) substrates"), not to those with 4H-polytype which is

disclosed in the present invention. As such, Onojima fails to disclose a semiconductor device comprising a III-V Nitride semiconductor epitaxial film having 4H-polytype structure.

Anticipation under 35 U.S.C. § 102 requires that each and every element of the claim be disclosed, either expressly or inherently in a prior art reference, *Akzo N.V. v. U.S. Int'l Trade Commission*, 808 F.2d 1471 (Fed. Cir. 1986). Onojima fails to disclose a semiconductor device comprising a III-V Nitride semiconductor epitaxial film having 4H-polytype structure formed in contact with a substrate having 4H-type structure, wherein the III-V Nitride semiconductor epitaxial film is a 4H-AlN film. Therefore, as it is apparent from the foregoing that Onojima fails to anticipate claim 51 of the present invention, Applicants respectfully request that the § 102 rejections of claim 51 be traversed.

III. All Dependent Claims Are Allowable Because The Independent Claim From Which They Depend Is Allowable

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claim 51 is patentable for the reasons set forth above, it is respectfully submitted that all pending dependent claims are also in condition for allowance.

Furthermore, as claims 52-57 contain the same features that are allowable over the cited prior art as claim 51, Applicants respectfully submit that new claims 52-57 are allowable over the cited prior art.

IV. Conclusion

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication of which is respectfully solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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